

ABSTRACT OF THE DISCLOSURE

A unified data flow is provided that allows multiplication of SIMD and non-SIMD multiplies in one multiplier. The multiplies may be both integer and floating point operations. The multiplier is partitionable having a plurality of sub-trees. The multiplier is configured to be a single tree structure in response to a non-SIMD multiplication instruction and as a partitioned tree structure in response to a SIMD multiplication instruction. At least two multiplication operations can be performed in parallel in the partitioned tree structure in response to the SIMD multiplication instruction and a single multiplication operation is performed in the single tree structure in response to the non-SIMD multiplication instruction. Appropriate formatting of the input operands and selection of data from the tree structures is performed in accordance with the instruction.